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ABSTRACT

In this report, the feasibility of alternative allocation strategies that would determine school district Title I allocations using district level poverty data and/or mandating the use of a single formula for the calculation of Title I grants is explored. The three criteria, availability of data, reliability of data, and administrative complexity of allocation tasks, were applied to the feasibility of four alternative allocation strategies: (1) single formula subcounty allocation; (2) single formula substitute allocation; (3) single formula direct allocation; (4) multiple formula substate allocation. Findings indicate that there are few availability and reliability problems, but that there are differences in the administrative complexity of the tasks required to implement any of the four allocation strategies. It is found that multiple formula substate allocation is the least complex and single formula direct allocation is the most complex. Charts and tables illustrate the findings. The availability and reliability of census data and of school district and county component AFDC, Foster Child, and Neglected and Delinquent Child Data, are discussed in detail. (WI)

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Volume III

Of the Title I, ESEA,

Subcounty Allocation Study

A Feasibility Analysis of Alternative Strategies for Determining School District Title I Allocations

Lynette Ferrara, Dianne Seiffert, and Alan Paller

National Institute of Education

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VOLUME III

A FEASIBILITY ANALYSIS OF ALTERNATIVE STRATEGIES FOR DETERMINING SCHOOL DISTRICT TITLE I ALLOCATIONS

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FOREWORD

This is the second of a four-volume report describing subcounty allocation of funds appropriated under Title I of the Elementary and Secondary Education Act of 1965, as amended in the Education Amendments of 1974 (P.L. 93-380). By Federal formula, allocations are determined by county. Therefore, subcounty allocation is the term given to the procedures used by states to apportion county allocations to school districts. At this point, the Congress is concerned that the subcounty allocation of Title I funds may lead to distributional effects that were not intended. The P.L. 93-380 Conference Report noted some of the reasons for this concern:

> "The conferees are concerned that the Department of Health, Education and Welfare, since the enactment of Title I, has administered the program in such a manner that funds are allocated to counties rather than to local education agencies, the units entitled to receive funds under the Title. The use of this administrative device could mean that school districts with increasing numbers of Title I eligible children in counties with static or declining numbers of such children may be denied rightful increases in Title I allocations.
>
> The conference committee does not wish these statements to be construed as condoning the present HEW practice of using county-level data as a substitute for local education agency-level data in calculating hold harmless levels. Rather, the conferees intend that this amendment as well as the 85 percent hold harmless provision, serve as an incentive to the Office of Education to collect appropriate local education agency-level data necessary to implement the amendments."

A separate section of P.L. 93-380 authorized the National Institute of Education (NIE), to conduct studies of compensatory education, including consideration of the feasibility, cost, and consequences of alternative ways of distributing federal compensatory education funds.

In September 1976, NIE contracted with Applied Urbanetics, Inc., to conduct an assesssment of subcounty allocation. The results of that assessment are to be presented in four volumes:

Volume I. Current Subcounty Allocation Practices;

Volume II. Impact of Variations in Subcounty Allocation Procedures on Title I ESEA Allocations to School Districts;

Volume III. A Feasibility Analysis of Alternative Strategies for Determining School District Title I Allocations;

Volume IV. A Summary of Alternative Strategies for Determining School District Title I Allocations

Volume I, Current Subcounty Allocation Practices, describes the origin and extent of the subcounty allocation process, the formulas and data sources used by the states, the methods used to collect and process data, and the costs of those methods.

Volume II, Impact of Variations in Subcounty Allocation Procedures on Title I ESEA Allocations to School Districts, describes the results of statistical analyses identifying the states in which districts would gain or lose funds under alternative allocation formulas and procedures, and identifying the types of districts that would gain or lose funds.

Volume III, A Feasibility Analysis of Alternative Strategies for Determining School District Title I Allocations, describes the availability and reliability of Census, AFDC, N&D and Foster data for school districts and the administrative complexity of alternative strategies for allocation to school districts.

Volume IV, A Summary of Alternative Strategies for Determining School District Title I Allocations, is a synthesis of the preceding three volumes, and reviews current state procedures and assesses the impact and feasibility of four alternative allocation strategies.

EXECUTIVE SUMMARY

Purpose

The current process used to determine school district Title I allocations, called subcounty allocation, was developed because of perceived limitations of available school district level poverty data. Currently, USOE calculates county Title I allocations using a single statutory formula. Each state, then, determines school district grants using the statutory formula or another formula of its choosing.

This report explores the feasibility of alternative allocation strategies that would determine school district Title I allocations using district level poverty data and/or would mandate the use of a single formula for calculation of Title I grants. The three criteria used to assess feasibility are:

- availability - the extent to which the data required for each of the formula components are now tabulated by school district and/or the county components of school districts;
- reliability - the extent to which the data required for each of the formula components accurately reflect the between-district distribution of poor children in each state; and
- administrative complexity - the extent to which adoption of an alternative allocation strategy would shift district allocation tasks from the state to USOE and/or would change the level of effort required to compute district level Title I grants.

The Four Alternative Allocation Strategies

This report examines four alternative allocation strategies that could be used to calculate district grants. They are:

1. Single formula subcounty allocation - USOE would continue to calculate county grants; the states would continue to allocate the county grants to school districts, however only a single national formula would be used.

2. Single formula substate allocation - USOE would calculate state grants; states would then use a single national formula for allocation to school districts.

3. Single formula direct allocation - USOE would calculate district grants, a single national formula would be used.

4. Multiple formula substate allocation - USOE would calculate state grants, the states would then calculate the allocations for school districts using a formula of their choosing within USOE guidelines.

Availability and Reliability of Census Data

The availability and reliability of school district and/or county component Census data are important only for assessment of the single formula allocation alternatives. As each single formula allocation strategy requires similar data, the findings of this analysis are similar for each alternative. Availability and reliability of Census data are not relevant to the assessment of multiple formula substate allocation because data now used for subcounty allocation could be used to implement the multiple formula substate allocation strategy.

A. Availability

Census data availability and reliability are a function of the source of Census data used as the Census component of the single formula. The school district and county component Census data can be tabulated from three sources: (1) 1970 Census data for Census enumeration areas; (2) the 1969-70 Special Tabulations by school district; and (3) the 1973-74 Special Tabulations by school district. The first data source contains data for standard Census reporting areas, such as counties, minor civil divisions, Census tracts, and enumeration districts. This source can only rarely be used directly to calculate school district Census counts because Census reporting area geography is coterminous with school districts in only a few states. The second and third sources contain Census data retabulated to reflect school district geography.

If multiple sources are permitted, Census data are available for the 39 states now using Census data for subcounty allocation. Census data are available for all districts with enrollments greater than 300 in the 11 remaining states. In seven

of these states, Alabama, Delaware, Iowa, Louisiana, Massachusetts, North Carolina and Wyoming, Census data are available for over 80 percent of the school districts. If multiple sources are permitted, the problems of obtaining and validating Census data in these 11 states are no worse than the problems already resolved by the 39 states currently using district level Census data in their allocation formulas.

If a single data source, such as the 1973-74 Special Tabulations, is required, school district Census data are available for all districts with enrollment greater than 300 that have not experienced significant boundary changes since the 1973-74 Special Tabulations were prepared.

B. Reliability

School district Census data are subject to three types of error: (1) sampling error, (2) allocation error, and (3) mapping error. The first type of error may affect the accuracy of all Census poverty statistics. The second and third types of errors affect only district and county component Census data derived from Census data published at levels of aggregation other than the school district. For each type of error, both the probability of error and the magnitude of error is greatest for areas of small population size, such as districts with enrollment less than 300.

The reliability of Census data are also related to the selection of sources. If multiple sources are permitted, the reliability of Census data now used for subcounty allocation has been validated by state and local review. If a single data source, such as the 1973-74 Special Tabulation, is selected for use in determining district grants, the reliability of the school district data must be validated by state and local review. The mapping and area allocation processes used to prepare the Special Tabulation meet or exceed the quality control standards used to prepare data now used for subcounty allocation.

Availability and Reliability of Other Formula Components

If the statutory or a similar formula is selected for use in a single formula allocation strategy, three other types of data may be required:

- counts of children in families receiving Aid to Families with Dependent Children (AFDC payments);

- counts of neglected and delinquent (N&D) children; and
- counts of Foster children.

AFDC data are available in 38 states. Because of the variability in AFDC payment levels used for subcounty allocation, many states will have to modify AFDC data collection procedures to collect AFDC data at a payment level selected for use in a single formula.

N&D data are now collected and maintained by school district. Reliable school district level counts of Foster children cannot be readily obtained to calculate district Title I allocations.

Administrative Complexity

Administrative complexity is a measure of the level of effort required to implement the alternative allocation strategies and of the magnitude of the tasks that are shifted from the states to USOE.

A. The Level of Effort Required to Implement the Alternative Allocation Strategy

Only one of the alternative allocation strategies, multiple formula substate allocation, requires no new data collection effort. States could calculate district Title I allocations using data now used for subcounty allocation. The three single formula allocation strategies - single formula subcounty, single formula substate, and single formula direct allocation - would require similar efforts to collect and validate Census and other data included as components of the single formula.

The level of effort required to collect and validate Census data is related to the source or sources of Census data selected for use in the single formula. If multiple sources are used, Census data are available for all districts in the 39 states now using Census data for subcounty allocation and for all districts with enrollment greater than 300 that have not experienced boundary changes since the 1973-74 Special Tabulation was created. If a single source of Census data such as the 1973-74 Special Tabulation is selected, Census data are available for all districts with enrollment greater than 300 that have not experienced boundary changes since the Special Tabulations were created.

Estimation procedures are required for districts not included in the data source or sources selected for use in the single formula. Most of the 39 states now using Census data have had to estimate data for districts not available from published sources, particularly for districts with enrollment less than 300. These procedures could be used to estimate Census poverty data for districts not available in the Census source selected for use in a single allocation formula.

Once Census data are collected for all districts, the reliability of the data, particularly for small districts, must be validated by state and local review. The level of effort required for the review is related to the source or sources of Census data selected for the single formula. If multiple sources of Census data are used, the Census data now used for subcounty allocation in 39 states have already been validated. New validation efforts are required in the 11 states where Census data are used for the first time and in any of the 39 states where changes to school district boundaries have required retabulation of school district Census data. If a single source is selected, the data for all states must be validated.

AFDC data are now available in 38 states. If a single formula allocation strategy is adopted, 12 states would have to institute procedures to collect AFDC data by school district. In addition, states now collecting AFDC data at payment levels other than the one included in the single formula would be required to modify their AFDC data collection process. If the single formula requires collection of counts of children in families receiving AFDC payments above the poverty level, 13 of the 38 states would have to modify their AFDC data collection process. Seven of the 12 states not now collecting AFDC data would not be required to collect AFDC data because AFDC payments are generally below the poverty line.

No new activity is required to collect counts of neglected and delinquent (N&D) children by school district. Foster data are now available for school districts in 33 states. School district counts of Foster children do not have sufficient reliability to warrant inclusion in a single formula.

B. The Number and Magnitude of Tasks Shifted from the States to USOE

The greatest variability between the four alternative allocation strategies is in the number and magnitude of the tasks shifted from the states to USOE.

Multiple formula substate allocation requires the fewest changes. USOE would calculate state Title I allocations using state level

data. This would decrease the level of data submission activity required of the states as county level counts of AFDC, N&D, and Foster children would no longer be required. The states would, then, calculate district Title I allocations using data now used for subcounty allocation.

Both single formula substate and single formula subcounty allocation would require new data collection efforts of some states as described above. The level of effort required to collect and validate Census data would be greatest for single formula subcounty allocation because the major source of county component Census data reflects 1969-70 school district boundaries. If single formula substate allocation is adopted, the 1973-74 Special Tabulations may be used as a Census data source. Neither of these options would require a shift in responsibilities from the states to USOE. Single formula substate would actually decrease data submission activity of the states, as USOE would calculate state Title I allocations from state level data. If single formula subcounty allocation is adopted, the states must continue to submit county level data to USOE.

Single formula direct allocation, if adopted, would require the greatest shift in responsibilities from the states to USOE. Because USOE would be required to directly calculate the district allocations, all states would have to report school district level AFDC and N&D counts to USOE. This activity would increase the reporting units from 3,300 to nearly 17,000. This would only be feasible if Congress requires states to submit school district level data and provides sanctions for failure to submit the required data within a time frame mandated by the law.

CHAPTER 1. ALTERNATIVE ALLOCATION STRATEGIES

The present procedure for determining Title I grants for school districts is called subcounty allocation. USOE determines allocations for counties according to a single statutory formula;[1] each state, then, is responsible for allocating funds to school districts or portions of school districts within each of its counties on the basis of the statutory formula or another formula of its choosing. Subcounty allocation was instituted as the best procedure available at the time of passage of Title I legislation, given limitations of the available data needed to calculate school district allocations. Since the law's passage, Congress, USOE and state officials have repeatedly expressed interest in allocation strategies that would directly determine school district Title I grants on the basis of school district level data. However, the technical problems associated with tabulation of school district level counts of poor children have been regarded as insurmountable.

This report takes a new look at four strategies that could be used to calculate school districts' grants under Title I ESEA. They are:

1. Single formula subcounty allocation - USOE would continue to calculate county grants; the states would continue to allocate the county grants to school districts, however, only a single national formula would be used.

2. Single formula substate allocation - USOE would calculate state grants; states would then use a single national formula for allocation to school districts.

3. Single formula direct allocation - USOE would calculate district grants; a single national formula would be used.

4. Multiple formula substate allocation - USOE would calculate state grants; the states would calculate the allocation for school districts using the formula of their choice within USOE guidelines.

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[1] The statutory formula allocates funds primarily on the basis of the number of children 5-17 in families in poverty according to the 1970 Census plus two-thirds of those in families receiving AFDC payments in excess of the current poverty level plus those in institutions for neglected and delinquent children plus those in foster homes.

The first alternative allocation strategy merely mandates a single formula for the subcounty allocation process. The other alternative allocation strategies determine school district grants on the basis of school district level data without calculating county grants.

Each of these alternative allocation strategies were found to be feasible when assessed on the basis of three criteria:

- availability - the extent to which the data required for each of the formula components is now tabulated by school districts and/or the county components of school districts;[1]

- reliability - the extent to which the data required for each of the formula components accurately reflects the between-district distribution of poor children in each state; and

- administrative complexity - the extent to which adoption of an alternative strategy would shift district allocation tasks from the states to USOE and/or would change the level of effort required to compute the district level Title I grants.

The remainder of this chapter provides a brief review of the subcounty allocation process,[2] describes the four alternative strategies, and defines the criteria used to assess the feasibility of alternative allocation strategies.

Chapters 2 and 3 examine the availability and reliability of formula component data for all school districts. Chapter 2 focuses on Census data, the major component of the present statutory formula. Chapter 3 focuses on the formula's other data components, counts of AFDC, Foster and N&D children.

Chapter 4 discusses the administrative complexity involved in accommodating each of the alternative strategies.

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[1] Data for the county components of school districts are required when school districts are in more than one county.

[2] A detailed description of the subcounty allocation process used by the 46 states that perform subcounty allocation is found in Volume I of the report on this study, Current Subcounty Allocation Practices.

The Subcounty Allocation Process

School district grants under Title I, ESEA are determined by a two-tiered process. First, USOE determines county level grants on the basis of a single national formula (the statutory formula). The current formula determines allocations on the basis of the number of poor, AFDC, neglected and delinquent, and foster children in each county.

The second tier involves division of the county grants among the constituent school districts. In all but four states and the District of Columbia, some or all of the school districts are not coterminous with counties. The current Title I law requires the states to determine each district's share of county Title I grants on the basis of locally collected poverty data. Table 1.1 presents an overview of the allocation formulas used by the states in FY 1977. Twenty-four states use the statutory formula. An additional 11 states use an allocation formula similar to the statutory formula. Eleven states use a formula quite different from the statutory formula.

The Four Alternative Allocation Strategies

This report explores the feasibility of four alternative allocation strategies:

1. single formula subcounty allocation;
2. single formula substate allocation;
3. single formula direct allocation; and
4. multiple formula substate allocation.

The first three strategies have similar data requirements. Either USOE or the states must acquire reliable data for each component of a single national formula. Because the first alternative remains a subcounty process, this strategy requires that data for each formula component must be available for each county component of the school districts in each state. For the second and third alternatives, only school district level data would be required.

A review of the data sources used by states in their current subcounty allocation system revealed that the majority already gather most of the data required for any of the first three alternatives. Thirty-nine states now use school district and

Table 1.1
FORMULAS USED FOR SUBCOUNTY ALLOCATION, BY STATE[1], FISCAL YEAR 1977

Same as Statutory Formula (1970 Census Orshansky[2] + 2/3 AFDC Above Poverty[3])	Similar to Statutory Formula	Current (Total AFDC	Other
			Alabama - Agreement based on available data.
Alaska			Arizona - 1970 Census below $3,000
			Arkansas - Free lunch and all AFDC (FY 1977)
	Colorado - 1970 Census Orshansky[4] + a weighting of AFDC	California	
	Connecticut - 1970 Census Orshansky + all AFDC above poverty		
			Delaware - 1971 AFDC above $2,000.
Ga	Georgia - 1970 Census Orshansky + 1/3 AFDC		
	Hawaii - 1970 Census below $3,000 + 2/3 AFDC		
Idaho [4]			
Illinois			
	Indiana - 1970 Census Orshansky only		
			Iowa - State Income Tax + all AFDC
Kansas			
Kentucky			Louisiana - Fixed Percentage.
Maine			
		Massachusetts	
Michigan			
Minnesota			
Mississippi - no AFDC above poverty			
		Missouri	
		Montana	
	Nebraska - 1970 Census Orshansky[4] + all AFDC		
New Hampshire			
New Jersey			
New Mexico - no AFDC above poverty			
New York			
			North Carolina - Agreement based on available data.
North Dakota[4]			
Ohio			
Oklahoma			
Oregon			
Pennsylvania			
Rhode Island			
South Carolina - no AFDC above poverty			
South Dakota			
Tennessee - no AFDC above poverty			
Texas - no AFDC above poverty			
	Utah - 1970 Census Orshansky + all AFDC		
	Vermont - 1970 Census Orshansky + all AFDC above poverty		
	Virginia - 1970 Census Orshansky only		
	Washington - 1970 Census Orshansky only		
Wisconsin			
		Wyoming	
24	10	5	7

[1]Does not include the District of Columbia, Florida, Maryland, Nevada or West Virginia in which counties and school districts are coterminous.

[2]Children 5-17 in families with 1969 income below the poverty line.

[3]Children 5-17 in families receiving aid to families with dependent children in excess of the current poverty level for a non-farm family of four.

[4]These states allocate part or all of their Census counts in proportion to average daily attendance.

Source: Profiles of Subcounty Allocation Procedures, Applied Urbanetics, Inc., 1977.

county component Census data in the subcounty process.[1] Thirty-eight states now use school district and county component counts of AFDC children.[2] Since there is wide variance in the AFDC payment levels included in the formulas states currently use, many states would have to modify the AFDC data collection process if a single AFDC payment level is selected as a basis for Title I allocations. Counts of neglected and delinquent children are readily available by school district in all states, and all states now include these children in the formula used to determine school district Title I grants. Collection of foster children by school district is not considered feasible in most states. As foster children make up only 2.2 percent of the Title I eligibles now included in the statutory formula, this formula component could be excluded from the Title I allocation process without greatly affecting the outcomes of the allocation process.

There are two major differences among these three alternative allocation processes. The first is the level of government responsible for the calculation of school district grants. The second is the process used to determine school district grants. If either single formula subcounty allocation or single formula substate allocation were adopted, USOE would determine state allocations. The states would then determine school district level allocations. The first allocation procedure retains the existing two-tiered allocation process. The states would continue to apportion county grants to school districts. The second alternative would allow the states to calculate district level grants directly. If the third alternative, single formula direct allocation, were adopted, USOE would calculate district grants directly.

Although each of these allocation strategies would require additional data collection activities on the part of the states, the third option - single formula direct allocation would require the most new data collection activity on the part of USOE, since USOE does not now maintain school district level data suitable for fund allocation. However, the analysis in the following chapters will show that collection and validation of the required data for the three alternatives is feasible, particularly if the states retain responsibility for determining Title I funds to school districts with enrollments less than 300.

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[1] This number includes the four states in which school districts and counties are coterminous.

[2] Ibid.

The fourth alternative would replace the two-tiered subcounty process by a two-tiered substate process. USOE would allocate the Title I allocation for each state based on a single national formula. The states would then calculate each school district's grant on the basis of a formula of its choosing. As states would remain free to chooose the formula used to allocate school district ESEA funds, adoption of this option would not necessitate new data collection. States could, of course, decide on a new allocation formula that might require new data collection.

The Criteria Used to Assess the Feasibility of the Four Alternative Allocation Strategies

Three criteria are used to assess the feasibility of the four alternative allocation strategies. They are:

1. availability of data for formula components;
2. reliability of data for allocation formula components; and
3. administrative complexity involved in accommodating the alternative strategies.

Availability

In this report, the discussion of data availability indicates the extent to which the formula components needed for each alternative allocation strategy presently exist and are tabulated at the school district level. Two standards are used to determine availability of Census data; they are closely related to the sources of Census data that the law or regulations mandate be used for allocation to school districts. If multiple sources of Census data may be used for determining school district allocation, Census data are available for all school districts in the 39 states that currently use 1970 Census data for subcounty allocation and for all districts in the remaining 11 states with an enrollment greater than 300 pupils and which have not experienced changes in school district boundaries since school year 1973-74. If a single source of Census data is required, school district data are available for all districts that have enrollment greater than 300 pupils that have not experienced boundary changes since school year 1973-74. Using this standard of availability and a single source, Census data are available for over 80 percent of the districts in 33 states. County component data are available for all school districts with enrollment greater than 300 that have not experienced boundary changes since 1969-70.

Data for other formula components are considered available if states now use essentially the same data in their subcounty allocation formula. For example, school district level counts of AFDC level are considered available in all states that now use counts of AFDC children, at any paymnet level, in their subcounty formula.

Reliability

Reliability is a measure of the accuracy of the school district level data included in the formula. Again two standards are used to measure the reliability of Census data. If multiple sources of Census data are used, two standards can be assessed. First, Census data are considered reliable if they meet the standards of reliability established by the Census Bureau for data tabulated at similar levels of aggregation. Second, Census data are considered reliable if they are now used by the state for subcounty allocation. If a single source of Census data is used, Census data are considered reliable if, using the second standard, the processes used to create and validate the data are similar to those the state used to obtain data now used for subcounty allocation.

Reliability is included in our assessment because many federal and state officials consider the school district and county component data required to implement any of the four alternative allocation strategies less reliable than the data that they now use for subcounty allocation. This report shows that the data reliability problems, where they exist, are the same for the subcounty allocation process as for the alternative strategies and, further, demonstrates that validation at the state and local level can overcome reliability problems where they exist.

Other component data are assessed only by the second standard. AFDC and other data are considered reliable if the state education agency has used similar data for Title I fund allocation and the data have been accepted as fair and accurate by local education agencies. Tabulation of school district level counts of these data are a time consuming but straightforward task. As these data are actual counts of children, they are not subject to error from estimation procedures or sampling.

Administrative Complexity

Administrative complexity is used to mean the level of effort required by USOE and/or the states if the alternative allocation strategy is adopted. Two quite different measures of administrative complexity are used:

1. Administrative complexity is a measure of the extent to which existing data collection and tabulation procedures must be modified if the alternative allocation strategy is adopted. The allocation strategy that requires more modification to current procedures is considered more complex than one requiring less modification.

2. Administrative complexity is a measure of the level of effort required to implement the alternative. A strategy that requires more person years of effort to determine school district Title I allocations is considered more complex than one requiring less effort.

The Feasibility Assessment

In the following chapters, we will show that each of the four alternative allocation strategies meet the standards used to assess feasibility. Availability and reliability problems do exist for some states. However, most of these problems have been resolved in other states with similar data collection problems that already use the required data for subcounty allocation. Only direct allocation by USOE will result in a significant increase in the administrative complexity of the Title I allocation system.

Adopting the fourth alternative, multiple formula substate allocation, would reduce administrative complexity. States would no longer be required to collect the county component data needed to allocate county level data (and Title I dollars) among the school districts in each county.

CHAPTER 2. AVAILABILITY AND RELIABILITY OF CENSUS DATA FOR SCHOOL DISTRICTS

This chapter assesses the extent to which the availability and reliability of Census data affects the feasibility of allocating Title I funds to school districts by use of four alternative allocation strategies discussed in this report. The assessment focuses on the three alternatives that use a single national formula. If the statutory or another Census-based formula is mandated, school district and county component data will be needed for states which are not presently using Census data in the subcounty allocation process and for which Census data are not readily available from published Census sources. The fourth alternative - multiple formula substate allocation - requires no change in the formula used by the states to allocate county grants to districts. Availability and reliability of Census data are important considerations in the assessment of the feasibility of this alternative only if states choose to adopt a different allocation formula than the ones now used for subcounty allocation.

The first three sections of this chapter describe available sources of Census data and assess the availability and reliability of school district and county component Census data obtained from these sources. The final section discusses the implications of the results of this assessment for the three single formula alternative allocation strategies.

Sources of Census Poverty Data for Title I Allocations

Three sources of Census poverty data currently exist and may be used for Title I allocation procedures. These are:

- 1970 Census data tabulated by Census enumeration areas, such as tracts, minor civil divisions and place;
- 1970 Census data specially tabulated for school districts according to boundaries in 1970; and
- 1970 Census data tabulated for school districts according to boundaries in 1974.

The 39 states now using Census data for subcounty allocation derived their data from the first two sources. The 1973-74 Special Tabulations were just recently created and, therefore, have not been used for subcounty allocation. A description of these sources, their strengths and weaknesses follows.

1970 Census Data Tabulations for Census Enumeration Areas

Census data are collected and tabulated for geographical areas, referred to as enumeration areas. Census areas include enumeration districts, tracts, block groups, minor civil divisions, places, counties, and cities.[1] Counts of children in poverty are available from U.S. Bureau of the Census publications (either printed documents or computer tape) for these Census enumeration areas.

School district data are directly available from these sources only in the minority of cases in which school district boundaries coincide with the enumeration areas included in each source. Data for the remaining districts must be indirectly obtained by aggregating and/or dividing the enumeration area data to match school district boundaries.

Three of these Census data tabulations are used by 21 states to determine school district Census counts for use in the subcounty allocation formula. These sources are the Census Bureau Fourth Count Tapes by Tract and Minor Civil Division, the Census Bureau Special Fifth Count by Block Groups and Enumeration area data to and the USOE Special Tabulation by Minor Civil Division and Place. The latter tabulation was prepared by the Bureau of the Census for USOE. A detailed description of these sources appears in Volume I, Chapter 3 of this study.

Special Census Tabulations for 1970 School Districts

Shortly after the completion of the 1970 Census, the USOE, NCES and Bureau of the Census performed the necessary operations of aggregating and/or dividing enumeration area data to obtain counts of children in poverty for most of the school districts and county components in the nation.

To begin the project, USOE mapped the 1969-70 boundaries[2] for all school districts with enrollment above 300 and for a small sample of districts with enrollment less than 300. The Bureau of the Census then identified all of the Census enumeration areas (block groups and enumeration districts) which were contained inside each school district and county component. Finally, the Bureau of the Census retabulated Census poverty counts for all enumeration areas in each school district to produce 1970 Census poverty counts for school districts and county components.

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[1] A detailed description of Census geography may be found in Volume I, Chapter 3 of this study.

[2] 1970-71 school district boundaries were mapped for the nine states of Minnesota, Missouri, Mississippi, Nebraska, New York, Oklahoma, South Dakota, Oregon, and Ohio.

In some school districts and county components the boundaries corresponded precisely with the areas for which Census had published data and poverty counts were directly obtainable. However, most district and county component boundaries cut through Census areas. Poverty counts in each split Census area were divided among the districts and county components on the basis of the percentage of the land area falling in each district.[1]

The 1970 Census tabulations for school districts were completed in 1973. Eighteen states use this source of school district level counts of children in poverty for Title I subcounty allocation.[2]

Special Census Tabulations for 1974 School Districts

Recently, the Bureau of the Census retabulated 1970 Census data for 1973-74 school district boundaries. These 1974 Census tabulations are essentially updates of the 1970 Census tabulations and were prepared in much the same manner as described above. The 1974 Census tabulations used maps of school districts showing 1973-74 boundaries that were produced as part of a NCES-sponsored project. As in the 1970 Special Tabulation, districts with enrollment under 300 are excluded.

A significant difference between the 1970 and 1974 Census tabulations makes the 1974 Census tabulations usable in subcounty allocation only for districts that do not cross county boundaries. The 1970 Census tabulations include data for county components of those school districts that cross county boundaries. The 1974 Special Tabulations do not include data for county components. The difference does not, however, affect the use of the 1974 tabulation for substate allocation.

The 1974 Census tabulations were not completed until March 1977 and, therefore, have not been used to calculate Title I allocations or been reviewed by the states.

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[1] The resulting data tabulations should not be confused with the School District Data Tapes, produced by Applied Urbanetics, Inc. The SDDT's allocated larger Census areas to school districts and were not as precise as was the Special Tabulation discussed in this section.

[2] This number includes the four states in which school districts and counties are coterminous.

Availability of Census Data by School District

In Chapter 1, Census data availability was shown to be closely related to the sources of Census data mandated for calculating district allocations. The following sections demonstrate that an allocation strategy that allows use of multiple Census data sources will encounter few Census data availability problems. Census data are available in the 39 states now using Census data for subcounty allocation. If a single source were mandated, however, all of the allocation strategies would require derivation of Census data for districts or county components not included in that single source. The level of effort necessary to produce that required data if a single source were mandated is greater than if multiple sources were allowed. This topic will be developed more fully in Chapter 4.

Census Data Availability if Multiple Sources Are Allowed

If multiple sources may be used to develop school district level Census data, then Census data are readily available for school districts and county components for the 39 states displayed in Figure 2.1. In addition, the 1973-74 Special Tabulations provide data for all of the districts with enrollments greater than 300 that have not experienced boundary changes since 1973-74 in the remaining 11 states. In seven of the 11 states - Alabama, Delaware, Iowa, Louisiana, Massachusetts, North Carolina and Wyoming - Census data are available for over 80 percent of the districts. County component data are available for districts with enrollment greater than 300 that have not experienced boundary changes since 1969-70. As the boundaries are less current, the percentage of county components for which data are readily available is problably less than that of school districts. (Time and resources did not permit a separate analysis of county component data availability.)

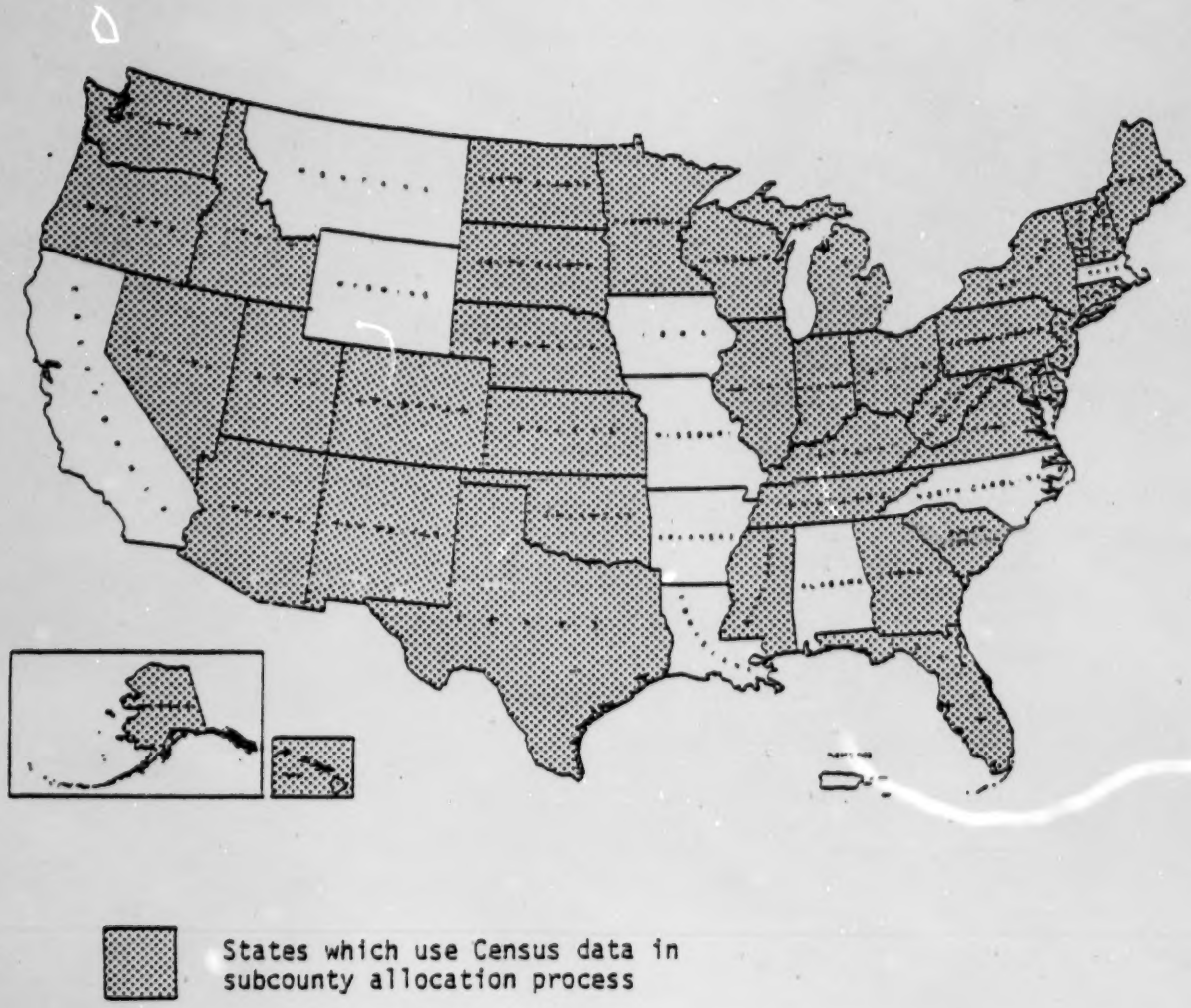
Census Data Availability if a Single Source is Mandated

Only two single sources of Census data offer data for areas that are coterminous with large numbers of school districts and could, therefore, be used as a single source for calculating district allocations. The 1969-70 Special Tabulations include data for all districts and county components with enrollment greater than 300 that have not experienced boundary changes since 1969-70. This tabulation is the only major source of county component data. This source would not, however, provide data for states that reorganized district boundaries after the data were tabulated. The second source of school district data - the 1973-74 Special

Figure 2.1

States Which Use Census Data

For Subcounty Allocation



States which use Census data in subcounty allocation process

Tabulations - provides data for all school districts with enrollments greater than 300 that have not experienced boundary changes since 1973-74.

Table 2.1 summarizes the analysis of Census data availability from the 1973-74 Special Tabulation for the school districts in each state. In 33 states, Census data are available for at least 80 percent of the districts (the remainder of districts have enrollments below 300). These states are shown in Figure 2.2. Moreover, in all but six states (Missouri, Montana, Nebraska, New Hampshire, North Dakota, and Vermont), the 1973-74 Special Tabulation includes more than 95 percent of the enrollment. If districts not now receiving Title I funds are excluded from the analysis, there is a slight increase in the percent of districts and of enrollment for which Census data are readily available.

Summary of Census Data Availability

This discussion has shown that Census data availability is a problem only for very small districts and for districts that have changed boundaries since the Special Tabulations were developed. County component data are available only for districts with enrollment greater than 300 that have not changed boundaries since the school year 1969-70. School district data are available for districts with enrollment greater than 300 that have not changed boundaries since school year 1973-74.

If a single source is mandated, data are available for at least 80 percent of the districts in 33 states. If multiple sources are allowed, data are available for all districts in 39 states and for 80 percent of the districts in seven of the remaining states. If any of the single allocation strategies are adopted, procedures for developing data for the districts for which data are not currently available will be required. Most of the states for which Census data are not available for all districts are similar in geographic configurations to states now using Census data for subcounty allocation. The procedures employed in these states (such as allocation of county data on the basis of ADA) could be utilized to prepare Census data for use in any of the single formula allocation strategies.

Reliability of Census Data

Reliability refers to the accuracy of the Census data used to calculate district Title I allocations. Most arguments against the feasibility of any of the single formula allocation strategies

Table 2.1

Coverage of 1973-1974 Census Tabulations for All School Districts And for Districts Participating in Title I, by State, Fiscal Year 1976

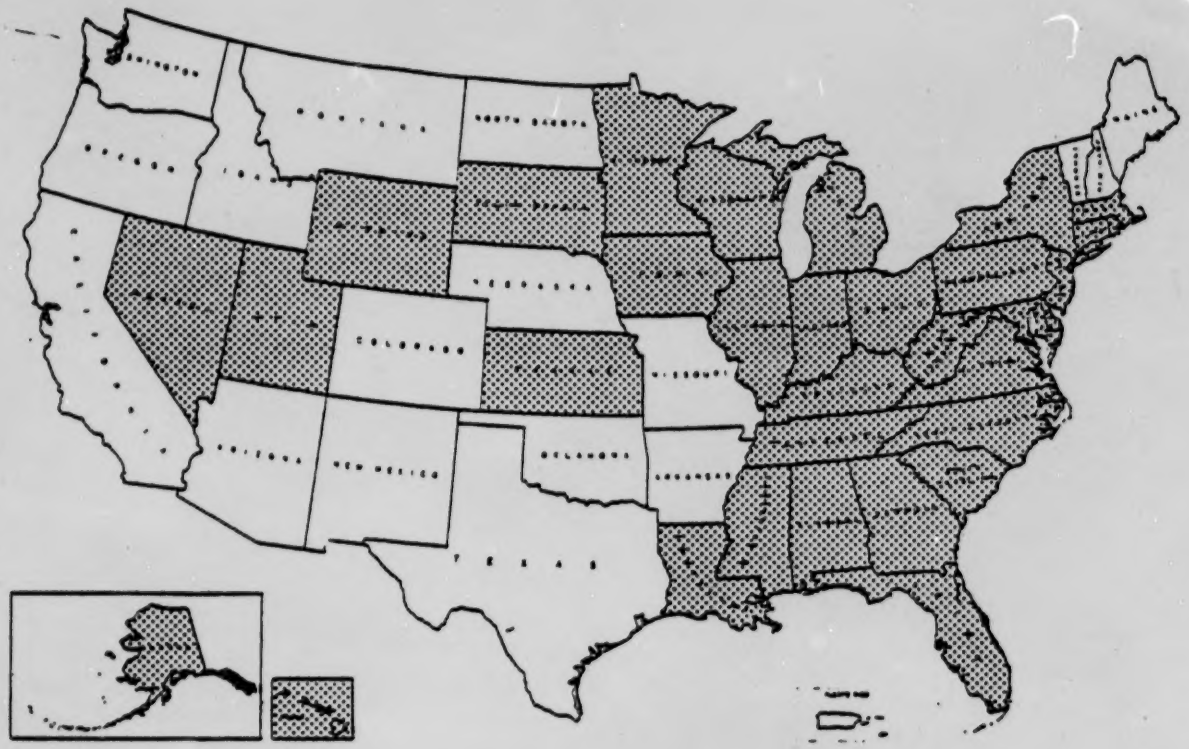
State	School Districts			Enrollment	
	Total Number	Percent on 1974 Census Tabulations	Percent in Title I and on 1974 Census Tabulations	Percent in Districts on 1974 Census Tabulations	Percent in Districts in Title I and on 1974 Census Tabulations
Alabama	129	93.7%	93.7%	97.6%	97.6%
Alaska1/	32	87.5	87.5	98.2	98.2
Arizona	239	59.8	56.1	96.2	96.1
Arkansas	386	75.7	76.5	94.7	95.4
California	1,037	68.0	72.4	98.5	98.5
Colorado	191	63.3	63.3	96.5	96.5
Connecticut1/	165	92.1	92.2	99.4	99.4
Delaware	24	88.5	96.2	98.3	98.3
Florida	67	100.0	100.0	100.0	100.0
Georgia1/	188	99.5	99.5	99.9	99.9
Hawaii1/	1	100.0	100.0	100.0	100.0
Idaho	115	73.9	32.5	97.1	97.4
Illinois	1,027	96.3	96.3	98.4	98.3
Indiana	304	99.1	99.0	99.9	100.0
Iowa	450	95.4	95.3	99.2	99.2
Kansas	309	98.7	98.7	98.5	98.5
Kentucky	182	98.4	98.4	99.9	99.9
Louisiana1/	66	100.0	100.0	100.0	100.0
Maine1/	221	60.3	67.9	94.3	95.1
Maryland	24	100.0	100.0	100.0	100.0
Massachusetts1/	356	34.1	37.0	98.3	99.3
Michigan	588	36.7	37.5	99.1	99.1
Minnesota	433	92.7	92.7	99.1	99.1
Mississippi	150	99.3	99.3	99.6	99.6
Missouri	567	57.9	58.5	88.0	88.1
Montana	598	19.6	40.3	75.7	81.7
Nebraska	1,194	19.1	87.2	85.8	90.9
Nevada	17	100.0	100.0	100.0	100.0
New Hampshire1/	156	57.7	59.0	93.0	93.3
New Jersey1/	582	85.4	89.2	98.6	98.8
New Mexico	88	77.2	77.3	98.5	98.6
New York	732	94.8	95.5	99.7	99.7
North Carolina	148	100.0	100.0	100.0	100.0
North Dakota	326	26.5	44.2	80.5	80.8
Ohio	617	99.1	99.3	99.9	99.9
Oklahoma	628	53.2	54.1	91.5	91.6
Oregon	332	51.8	83.9	95.9	95.9
Pennsylvania1/	604	99.5	99.5	99.8	99.8
Rhode Island1/	40	97.5	97.5	100.0	99.9
South Carolina	93	100.0	100.0	100.0	100.0
South Dakota	219	84.4	92.7	99.0	99.2
Tennessee1/	146	97.3	97.2	99.8	99.9
Texas	1,103	58.3	59.5	97.9	97.9
Utah1/	40	100.0	100.0	100.0	100.0
Vermont1/	245	42.0	46.5	79.5	84.0
Virginia1/	133	96.2	96.2	99.6	99.6
Washington	304	71.0	72.3	98.5	98.5
West Virginia	55	100.0	100.0	100.0	100.0
Wisconsin	436	92.9	93.1	99.4	99.4
Wyoming	50	84.0	86.0	97.7	97.8
U.S. Total	16,032	74.2%	82.3%	98.4%	98.5%

1/ In these states, most school districts are coterminous with counties, cities, towns or townships, and Census data for the districts not on the 1974 Census Tabulations may be obtained from published Census sources.

Source: Title I District-Level Fund Allocations file for Fiscal Year 1976, prepared by CEMREL, Inc., for the National Institute of Education, 1977

Figure 2.2

States Where Census Data are Available in the 1973-74 Special Tabulations for 80 Percent or More of School Districts



States where Census data are available for 80 percent or more of the school districts

have centered on the perceived low reliability of the school district and/or county component Census data contained in the 1969-70 Special Tabulations.

Three commonly cited limitations of the 1969-70 Special Tabulations are:

- omissions of entire counties from Census tabulations;
- inconsistency with published Census data sources; and
- coding errors in the mapping processes used as a basis for school district data tabulations.

An analysis of the 1969-70 Special Tabulations has shown that the magnitude of error in these data has been overestimated because of misunderstandings of other Census source data and of errors in Census Bureau tabulations and publication that were remedied during preparation of the 1973-74 Special Tabulations.[1]

This section demonstrates that Census data required to implement any of the single formula allocation strategies is at least as reliable as that now used in the 39 states employing a Census component for subcounty allocation. The data now used by a state for subcounty allocation are considered reliable by the states. Data from sources not now being used for determining district allocations, whether from a single source or multiple sources, must be validated before they can be considered reliable. If multiple sources of Census data are allowed, school district and/or county component data now used or available either meet the standards of reliability established by the Census Bureau or have been validated by state and local review. If a single data source is mandated, the reliability of the school district and county component data could be validated by review procedures similar to those employed to validate Census data now used for subcounty allocation.

For districts coterminous with Census enumeration areas, published Census sources could be used without state and local review. For most school districts, however, some type of state and local validation would be required. The validation procedures and the level of effort required to validate the reliability

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[1] Appendix A provides a more detailed discussion of the perceived limitations of the 1967-70 Special Tabulations and their resolution.

of Census data not now used for calculating district allocations, from either a single or multiple sources, are described in Chapter 4.

Three major factors contribute to the unreliability of school district and county component Census data:

1. sampling error - error resulting from the estimation of population statistics from sample survey data;

2. allocation error - error resulting from retabulation of data published for Census enumeration areas for school district and/or county components not coterminous with Census enumeration areas; and

3. mapping error - error resulting from mistakes in the cross-referencing of Census enumeration area and school district and/or county component geography or from changes in school district boundaries that occur after the cross-referencing process is completed.

Whether the current subcounty process or any of the three alternative allocation strategies are used, all of these sources of error may affect the reliability of the Census data used to calculate district allocations. The following paragraphs describe these three sources of unreliability.

Sampling Error

Sampling error affects the reliability of any Census data used to calculate district allocations, regardless of the allocation process that is adopted. All Census poverty data were collected from a survey of 20 percent of the nation's households. Sample survey data are subject to sampling error - a probability that the data tabulated for any Census enumeration area will be inaccurate. Sampling error is closely related to the number of households included in the enumeration unit for which Census data are reported: the magnitude of sampling error is inversely related to the number of households in the enumeration unit. For very small areas, such as Census enumeration units, block groups and for school districts with enrollment less than 300, reported statistics can vary from population parameters by as much as 30 percent.

If multiple sources of Census data are allowed, sampling error would not affect the data in the 39 states now using Census data if the standard of reliability is that the data have been used in subcounty allocation. The data have been reviewed by state and local districts and are believed to reflect accurately the

between-district distribution of poor children. If a single source of Census data were mandated or if those states not now using Census data were required to use Census data for determining district allocations, sampling error may affect the reliability of estimates of the between-district allocation of poor children.

In districts coterminous with Census enumeration districts, the data are as reliable as all published Census data; there is a known sampling error associated with the data. However, the known sampling error is very high for smaller districts. For school districts not coterminous with Census enumeration areas, other allocation and mapping errors can increase the magnitude of inaccuracies due to sampling error. The direction of the relationship between population size and sampling error is the same. Data for small districts are the least reliable. Therefore, when any source of Census data is used for district level fund allocation for the first time, validation of the between-district distribution of poor children is required.

Allocation Error

Allocation error may affect the reliability of all school district and county component data retabulated from data reported for Census enumeration units not coterminous with school districts and county components. The enumeration area data are allocated to school districts on the basis of the proportion of the geographic area in each district. If a school district includes more than one Census enumeration area, the data are summed to produce the school district data.

Allocation error can result from two kinds of allocation assumptions. The first assumption is that the population, particularly the population of poor children, is distributed evenly across a Census enumeration unit. If half of the enumeration district is included in a school district, half of the poor children are allocated to the district. Frequently, poor children are not evenly distributed, but clustered in one portion of the geographic unit. Allocation error may, therefore, result in misallocation of poor children between districts.

Allocation error of this type has been considered the most serious source of error in the USOE 1969-70 Special Tabulations. The perceived unreliability of these data was so severe that only 18 of the 39 states now using Census data for subcounty allocation chose to use this source. However, an analysis of the cross-reference of school district and Census enumeration

area geography used to create the 1973-74 school district Census tabulation suggests that the magnitude of allocation error is overestimated. In 11 states, all of the population lived in districts fully coterminous with one or more Census enumeration areas. Nearly half of the nation's school districts, including over 80 percent of the total population, have less than 20 percent of the population in split Census enumeration units.[1]

The second assumption resulting in allocation error is that poor children are equally distributed in each age group. This assumption is used to allocate poor children among overlapping districts, e.g., allocation of Census data between elementary and secondary school districts covering the same portion of a Census enumeration area. Generally, the Census data are allocated on the basis of the fraction of the children 5-17 in the age range served by the school district.

Allocation error occurs when the actual distribution of children in each age range varies from the assumed equal distribution. The 1969-70 Special Tabulations do not adjust for age differences between school districts. The number of poor children 5-17 are reported for all school districts and county components on the file. The 1973-74 Special Tabulations do report children 5-11 and children 12-17. In either case, USOE or the states may have to adjust allocations to reflect the actual grade spans served by overlapping districts. States now using Census data from other sources have made similar assumptions.

Many state respondents believe that the Census data used by the states are less subject to allocation error than those produced by USOE. However, a review of state allocation practices (described in Volume I of this report) has shown that the data now used by the 21 states that prepared their own school district Census data are more prone to error than that contained in either of the USOE Special Tabulations. Most states derived their data from Census enumeration units such as minor civil divisions, which are considerably larger than the enumeration districts and block groups used to create the Special Tabulations. With larger units, both the probability of allocation error and the size of the error is likely to be larger. In other states, enrollment or Free Lunch data were used to allocate county data among districts in a county. Again, the probability or magnitude of allocation error is larger than that of the data contained in

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[1] A state-by-state analysis of the percentage of school districts and population which are subject to allocation error is found in Appendix B.

the Special Tabulations. On the other hand, the data used by the states have been subjected to state and local review.

If multiple sources of Census data are used, the effect of allocation error is known not to be unacceptably large in the 39 states now using Census data and in other unified districts fully coterminous with Census enumeration units. If a single source of Census data is mandated or if Census data are required for states not now using Census data for subcounty allocation, validation procedures will be required to identify and correct allocation error.

Mapping Error

Census data retabulated for school district and county components not coterminous with Census enumeration units is subject to error due to inaccurate or out-of-date cross-referencing of school district and Census enumeration area geography.

Mapping error is a major cause of the unreliability of the 1969-70 Special Tabulations. In New York, Michigan, and Illinois, inaccurate mapping resulted in severe error in the data reported for districts centered in several counties. In other states, changes in school district boundaries rendered the 1969-70 Special Census Tabulations obsolete.

The 1973-74 Special Tabulations have, to a large extent, remedied the mapping error in the 1969-70 Special Tabulation data. Error due to inaccurate mapping was corrected; changes in school district boundaries were used to update reported Census data. An analysis of changes in school district boundaries suggests that changes are becoming less frequent and can often be remedied by summing data for consolidated districts.[1] However, states now using Census data for subcounty allocation validated the boundaries used to retabulate the Census data and annually adjust the data to reflect changes in school district boundaries. If a single source of Census data is mandated or if Census data are required for states not now using Census data, validation of boundaries and annual updating will be an important part of the administrative process. The required validation and updating procedures are described in Chapter 4.

Summary of Census Data Reliability

This discussion has shown that Census data are reliable in 39 states. If a single Census source is mandated or Census data are

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[1] A more complete discussion of trends in district boundary changes is provided in Appendix C.

required for a single formula allocation strategy, validation procedures used by these states may be used in the 11 states not now using Census data. The use of multiple Census sources in a single allocation strategy will require the smallest validation effort, as 39 states can use existing data. If a single source is mandated, validation would be required for all districts not coterminous with Census enumeration areas.

The Implications of the Assessment of Census Data Availability and Reliability for the Feasibility of the Three Single Formula Allocation Strategies

At the beginning of this chapter, the availability and reliability of Census data was shown to be irrelevant to the feasibility of the multiple-formula substate allocation strategy. States may use data now used for subcounty allocation; no new data are needed. The remainder of the chapter has shown that Census data availability and reliability problems are the same regardless of which of the three single formula allocation strategies are adopted. Data are not available or reliable for small districts, particularly if a single source of Census data, such as the 1973-74 Special Tabulations, is mandated.

The use of multiple sources increases the number of districts for which data are directly available and reliable. However, data must be produced for districts with enrollment less than 300 in the 11 states not now using Census data for subcounty allocation.

None of these data availability or reliability problems are significantly different from those successfully resolved by states now using Census data for subcounty allocation. It is administrative complexity of the data collection and validation process that distinguishes between the four alternative allocation strategies and the current subcounty allocation process. Neither subcounty allocation nor multiple formula substate allocation require new efforts to collect or validate Census data. The three single formula allocation strategies require some new data collection and validation effort. Single formula subcounty and single formula substate allocation would require the most effort from the states. Single formula subcounty is potentially the most difficult because the district boundaries reflected in the 1969-70 Special Tabulations, which contain county component data, may be obsolete. Single formula direct allocation would require USOE to work with the states to collect and validate Census data. An assessment of these and other issues related to administrative complexity is found in Chapter 4.

CHAPTER 3. THE AVAILABILITY AND RELIABILITY OF SCHOOL DISTRICT AND COUNTY COMPONENT AFDC, FOSTER, AND N&D DATA

This chapter describes the availability and reliability of school district and county component level AFDC, Foster, and N&D data and assesses the feasibility of the three alternative allocation strategies using available and reliable data. The fourth allocation strategy, multiple formula substate allocation, would not require states to collect AFDC, Foster, or N&D data if these data are not currently used for subcounty allocation. AFDC, Foster and N&D data are considered available and reliable if the state currently uses these data in the subcounty allocation process.

AFDC Data

AFDC data are now collected by school district and/or county components of school districts in 38 states.[1] These states are displayed in Figure 3.1. Only 12 states would have to institute new data collection procedures if a single formula allocation strategy were adopted that required AFDC data.

Table 3.1 provides a more detailed analysis of the availability of AFDC data. Twenty-five states now collect counts of children in families receiving AFDC payments above the Census-defined poverty level. Twelve of the remaining 13 states using an AFDC component collect counts of all children in families receiving any level of AFDC payments. Delaware uses counts of children in AFDC families receiving over $2,000 in payments. If one of the three single formula allocation strategies is adopted, and the AFDC component was mandated to be counts of children in families receiving payments above the Census-defined poverty level, then seven of the 12 states not now using AFDC data would not need to begin collecting this data. These seven states - Alabama, Arizona, Mississippi, New Mexico, South Carolina, Tennessee, and Texas - have no children in families receiving payments above the Census-defined line. The remaining five states - Indiana, Louisiana, North Carolina, Virginia, and Washington - would have to design and implement a program to collect school district level data. However, if the current statutory formula is mandated, only Indiana and Washington, which have substantial numbers of AFDC children above poverty, would be required to collect AFDC data. In

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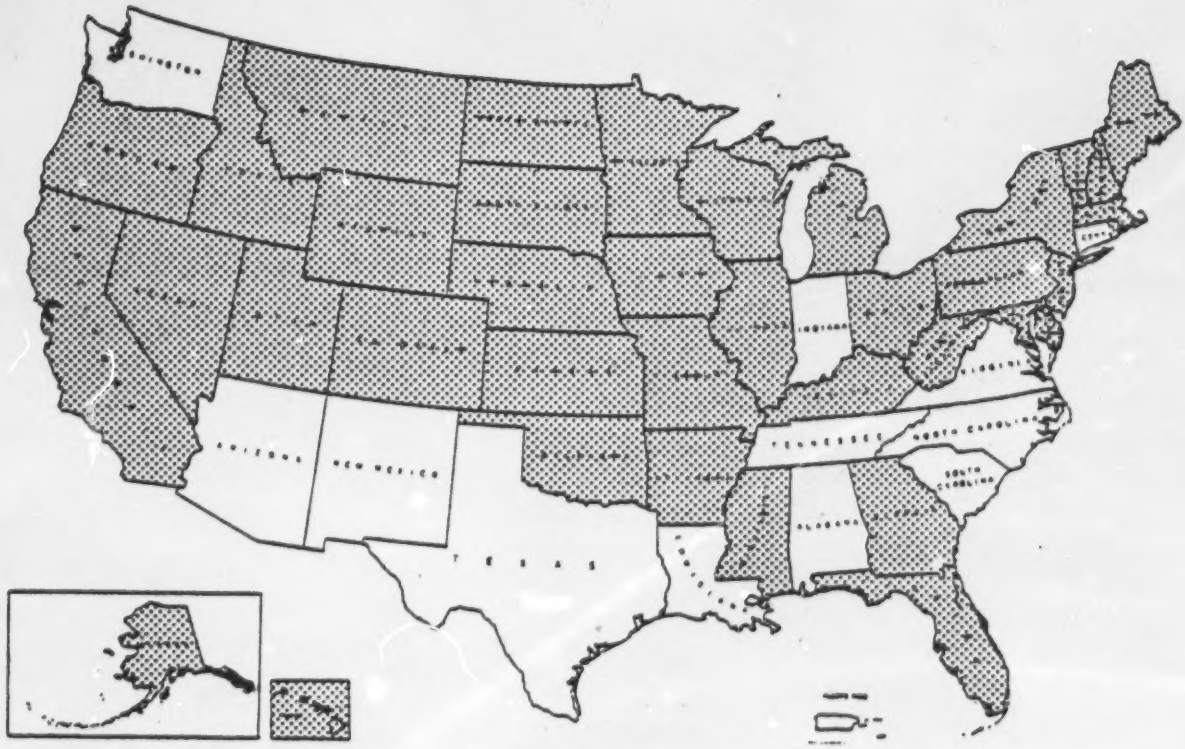
[1] This number includes the four states in which counties and school districts are coterminous.

Figure 3.1

States Which Use AFDC Data for

Subcounty Allocation



States which use AFDC data in subcounty allocation process

Table 3.1

AFDC Data Requirements for Title I Allocation, by State, Fiscal Year 1977

State	Performs Subcounty Allocation	AFDC Above Poverty as a Percent of All Title I Eligible Children	Currently Collects AFDC Data for School Districts		Needs to Collect AFDC Data for School Districts
			Above Poverty	All AFDC	
Alabama	Yes	0.0%	-	-	Yes
Alaska	Yes	5.2	Yes	-	-
Arizona	Yes	0.0	-	-	Yes
Arkansas	Yes	0.0	-	Yes	-
California	Yes	10.3	-	Yes	-
Colorado	Yes	2.3	-	Yes	-
Connecticut	Yes	14.3	Yes	-	-
Delaware	Yes	2.5	-	Yes [1]	-
Florida	-	0.002	Yes	-	-
Georgia	Yes	0.0	-	Yes	-
Hawaii	Yes	23.3	-	Yes	-
Idaho	Yes	2.5	Yes	-	-
Illinois	Yes	18.0	Yes	-	-
Indiana	Yes	1.7	-	-	Yes
Iowa	Yes	7.1	-	Yes	-
Kansas	Yes	3.2	Yes	-	-
Kentucky	Yes	0.07	Yes	-	-
Louisiana	Yes	0.004	-	-	Yes
Maine	Yes	3.4	Yes	-	-
Maryland	-	0.5	Yes	-	-
Massachusetts	Yes	14.7	-	Yes	-
Michigan	Yes	25.6	Yes	-	-
Minnesota	Yes	7.9	Yes	-	-
Mississippi	Yes	0.0	-	-	Yes
Missouri	Yes	0.3	-	Yes	-
Montana	Yes	0.0	-	Yes	-
Nebraska	Yes	1.1	-	Yes	-
Nevada	-	0.4	Yes	-	-
New Hampshire	Yes	4.5	Yes	-	-
New Jersey	Yes	16.4	Yes	-	-
New Mexico	Yes	0.0	-	-	Yes
New York	Yes	23.2	Yes	-	-
North Carolina	Yes	0.003	-	-	Yes
North Dakota	Yes	2.2	Yes	-	-
Ohio	Yes	1.7	Yes	-	-
Oklahoma	Yes	0.3	Yes	-	-
Oregon	Yes	11.9	Yes	-	-
Pennsylvania	Yes	12.4	Yes	-	-
Rhode Island	Yes	9.3	Yes	-	-
South Carolina	Yes	0.0	-	-	Yes
South Dakota	Yes	1.3	Yes	-	-
Tennessee	Yes	0.0	-	-	Yes
Texas	Yes	0.0	-	-	Yes
Utah	Yes	6.1	-	Yes	-
Vermont	Yes	9.4	Yes	-	-
Virginia	Yes	0.1	-	-	Yes
Washington	Yes	11.5	-	-	Yes
West Virginia	-	0.006	Yes	-	-
Wisconsin	Yes	12.5	Yes	-	-
Wyoming	Yes	0.0	-	Yes	-
U.S. Total	46	6.4%	25	13	12

1 Delaware uses AFDC above $2,000.

Source: Volume I of the Subcounty Allocation Study: Current Subcounty Allocation Practices, prepared by Applied Urbanetics, Inc., for the National Institute of Education, 1977.

the other three states, the number of children in families receiving AFDC payments above the poverty line is so small that the effort required to determine school district counts would be minimal. However, if another AFDC payment level is mandated, these data collection tasks may be required in all 12 states which do not currently collect school district counts of AFDC children.

The standard of reliability of AFDC data is simply that AFDC counts are now used in subcounty allocation. This standard is adopted as the sole criteria of the accuracy of the AFDC data for three reasons. First, the data collection procedures are relatively straightforward. Second, validation of the counting procedures used by the states is not cost effective. Third, neither the states nor USOE have reported that local education agencies were dissatisfied with the counts of AFDC data used in subcounty allocation. The methods used by states to obtain school district and county component data were presented in Volume I of this study. They are briefly reviewed in this section to support the argument that availability and reliability can be considered equivalent for AFDC data.

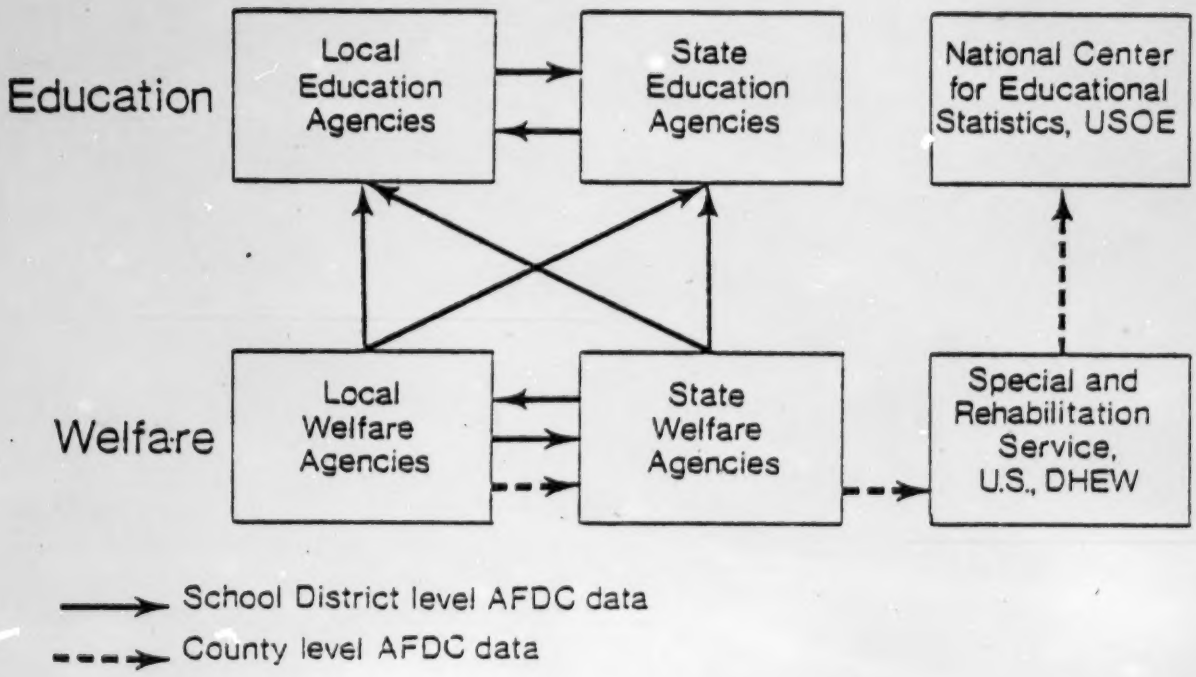
School district AFDC data are not, in general, gathered or transmitted in the same manner as are the county AFDC data used by USOE in the current allocation process. (See Figure 3.2.) County counts of AFDC data are relatively simple to obtain. AFDC is usually administered at the county level, so each casefile reflects the appropriate county. Obtaining counts of children involves a straightforward mechanical process of comparing the payment level with the poverty line and counting children aged 5-17 in those families with incomes above poverty and receiving AFDC payments.

When the county counts are completed they are sent to the state welfare office. From there, they go to the Social and Rehabilitation Service (SRS) in Washington, D.C. (SRS sends the counts to the National Center for Education Statistics with copies to the regional SRS offices.) State and local education agencies are not involved in the process.

Obtaining school district level data, on the other hand, currently involves the state education agency in all of the 34 states using AFDC data for subcounty allocation, and the local education agencies in eight of those states, and requires more effort than does the process of obtaining county counts of AFDC children. Added effort and judgment are required to determine which school district should be associated with each AFDC casefile, or with each child. This task is performed through one of several types of procedures.

Figure 3.2

Flow of AFDC Data: County Versus Subcounty Procedures



- In the New England states, AFDC is administered at the town level and school districts generally coincide with towns. This reduces the tabulation problem to the same mechanical functions described earlier for obtaining county counts. In fact, since New England towns submit counts of AFDC children to be used as components of the county numbers, most of the data are readily available by school district, in the state welfare offices.[1]

- In eight states, AFDC children's names or addresses are analyzed to determine the districts the children attend. In most of these states the local education agency has primary responsibility for identifying the school district, although the local welfare agency often assists.

- In the remaining states, the local welfare agency identifies the school district attended by Title I eligible children, either by asking the child's family or by depending on the caseworker's knowledge of school district geography.

Table 3.2 lists the procedure used by each state.

The county and subcounty procedures vary in two other important respects. First, no federal regulation exists to guarantee local welfare cooperation in tallying counts of AFDC children for school districts. Such a mandate, as exists for county allocation, would be advisable if AFDC data were required for school districts nationwide under any of the three single formula allocation alternatives. Secondly, the county level data submitted to SRS reports only one income level cut-off counts are for two-thirds of children in families with incomes above the Orshansky poverty level receiving AFDC payments. Current state practices include using income cut-offs other than Orshansky poverty, which could result in shifting of funds between the county and school district levels. This difference could be remedied by mandating state and local welfare department cooperation at the school district level, since in most states the use of computer data banks make any breakout of income level

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[1] Where school districts serve multiple towns, or in the fewer than 1 percent of districts which split towns, additional effort and local knowledge are required.

Table 3.2

Methods of Acquiring School District Level AFDC Counts, by State,[1] Fiscal Year 1977

State	Local Welfare Agencies Identify School District	LEAs Address Match to School District[4]	LEAs Name Match to School District[4]	SEAs Match "Towns" to School District	Other
Alaska					Local knowledge (SEA)
Arkansas	X				
California		X	X		
Colorado			X		
Connecticut				X	
Delaware	X				
Georgia		X			
Hawaii				X[3]	
Idaho					Local knowledge (SEA)
Illinois					Card voucher system
Iowa	X				
Kansas	X				
Kentucky				X[4]	
Maine				X	
Massachusetts				X	
Michigan		X			
Minnesota	X				
Missouri	X				
Montana		X	X		
Nebraska	X				
New Hampshire				X	
New Jersey	X				
New York		X	X		
North Dakota	X				
Ohio	X				
Oklahoma					Local Knowledge (SEA)
Oregon		X			
Pennsylvania	X				
Rhode Island				X	
South Dakota	X				
Utah		X	X		
Vermont				X	
Wisconsin	X				
Wyoming				X	
	13	7[2]	5[2]	9	4

[1]Includes only those states which use AFDC data in subcounty allocation.

[2]Some states use both name and address matching. In total, LEA's are responsible for AFDC data in eight states.

[3]SEA consultant address matches to school district.

[4]SEA address matches to school district.

Source: State Profiles of Subcounty Allocation Procedures, Applied Urbanetics, Inc., March, 1977.

possible. New retrieval programs may be required, but no additional data collection would be necessary.

To gain further understanding of the procedures and to determine whether they might lead to unreliable data, Applied Urbanetics staff spoke with representatives of state welfare agencies, local welfare agencies and local education agencies in 22 states. The discussion covered the techniques used to obtain AFDC data by school district and the problems that the state and local officials had found.

Table 3.3 summarizes typical types of errors reported by state and local officials and the verification techniques they employed to find and correct them. Principal kinds of AFDC data errors mentioned were clerical errors in coding and mapping and errors caused by discrepancies between an AFDC child's address and his or her school district attendance. Such errors result in undercounting of AFDC Title I eligibles or misallocation of them among school districts.[1]

Residence/school attendance discrepancies were cited most often and generally resulted from three sources. First, accuracy in part depends on whether personnel responsible for identifying school districts are fully knowledgeable of district boundaries, especially for borderline addresses. A second obstacle to accuracy is false address information supplied by AFDC applicants to circumvent school system regulations prohibiting school attendance outside of district of residence. A third factor is that accuracy is affected by the fact that welfare services may not have to be provided in the town of residence, as in the case of Massachusetts.

On the other hand, officials in some states were not concerned about residence/school attendance discrepancies. An Oregon school official reasoned that "the children who generate the dollars are not the children who get the dollars." And a Michigan school official explained that extra eligibles assigned to his district because of residence, though they did not attend his school, just served to compensate for the mobility of students among districts within each school year.

Although welfare and education spokespersons pointed out various problems, most of them expressed satisfaction with the accuracy

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[1] The residence/attendance discrepancies do not necessarily lead to incorrect Title I allocations. States are authorized to shift funds among districts "in the case of a local education agency which provides free public education for a substantial number of children who reside in the school district of another local education agency."

Table 3.3

Types of Errors and Verification Techniques in School District Identification Methods Used by States for Counts of AFDC Children, Fiscal Year 1977

Types of Errors	Verification Techniques[1]
SCHOOL DISTRICT ASSIGNMENT • Address/district discrepancies • Mapping errors • Cross-county errors	Welfare office consults school superintendents on borderline assignments (Ky., Mo.) Welfare office caseload assignments made by school district (Pa.) Names of children in school districts are matched with address lists of welfare cases (Mich., Mo., Ohio) Welfare office requests verification of school attendance from school superintendents (N.J.) In addition to school district, AFDC records are coded with school building (Minn., Mo., Wisc.) and grade level (Minn.) Maps are used to help match addresses with school districts (Ky., N.Y., Oreg.) Lists are used of school districts by boundary street with indication of county where school buildings are located (S.Dak.)
CODING ERRORS • Garbled records • Incomplete information • Outdated information	Data are checked with original files (Calif., Minn., N.J.) Welfare office updates school district information on case records as soon as AFDC recipients report school or address changes (Mo.)
DUPLICATION • Duplicate records • Duplicate claims by local education agencies	Computer culls duplicates and incomplete entries for manual validation (Pa., Maine) Duplicate claims are mediated by state education offices, or administrative units of the state education agency (Mich., N.Y.)

[1]Verification practices may not be state-wide.

Source: Telephone interviews with state and local welfare agency officials, Applied Urbanetics, March 1977.

of the data gathered. An official of a large school district in California estimated only a 2 percent error in the data collected before verification steps are employed. Officials in most other states, although they could not supply statistical evidence, similarly described the accuracy of their counts of AFDC children by school district as high.

Foster Child Data

If the standards of availability and reliability used to assess the feasibility of including AFDC data in a single formula Title I allocation strategy are used to assess Foster child data, data are available in the 33 states displayed in Figure 3.3.[1] In the other 17 states, the state either allocates county counts of Foster child data among districts on the basis of Census data or Foster children are not used in subcounty allocation.

Even in states in which foster data are collected, the data are likely to be considered inaccurate by state officials, suggesting that the standard for availability may overestimate the perceived reliability for these data. In one New England state, for example, a state official noted that some Foster children were counted a second time, as N&D children. A few state officials reported having accurate counts of Foster children, but only after what they felt were extraordinary verification steps. The consensus of state officials was that Foster data were far less reliable than were counts of AFDC children.

Foster data are a barrier to use of a single formula for allocation to school districts. Counts of children in Foster homes comprise only 2 percent of Title I eligible children in FY 1977. For these reasons, the data would need to be dropped as a requirement if allocation to school districts using a single formula is to be feasible.

Neglected and Delinquent Children Are Readily Available and Reliable for School District and County Components in All States

All institutions serving N&D children, and which are eligible for Title I, are required to complete USOE Form 4376-1. On that form, which was reporduced in Volume I (Chapter 3) of this study, the institution must indicate the school district and

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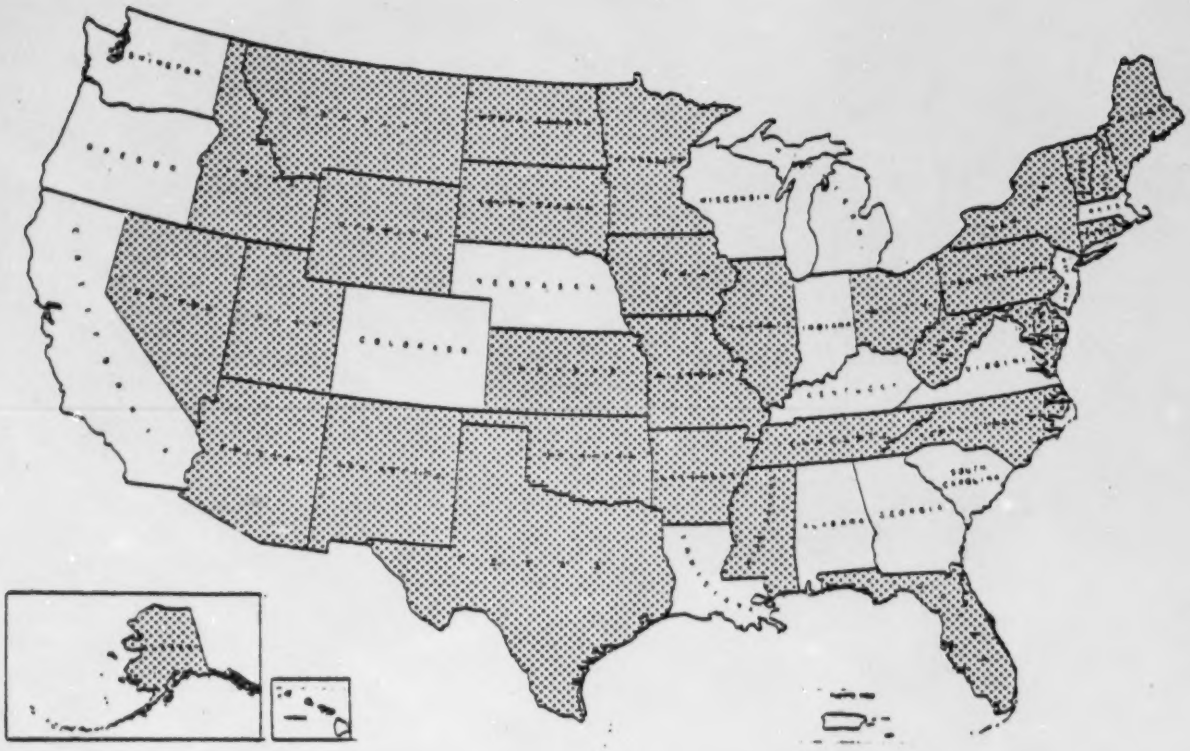
[1] This number includes the four states in which school districts and counties are coterminous.

Figure 3.3

States Which Use Foster Data for

Subcounty Allocation



States which use foster data in subcounty allocation process

county in which the institution is located as well as the number of children aged 5-17 living in the institution. These forms are maintained at USOE and school district summaries can be calculated directly from data contained on the forms. The data collection procedure was established by USOE and is uniform nationwide. Consequently, availability and reliability of N&D data present no barriers to any of the three single formula alternative allocation strategies.

The Implications of the Feasibility and Reliability of AFDC, Foster, and Neglected and Delinquent Data for the Three Alternative Allocation Strategies

AFDC data are available and reliable in most states and N&D data are available and reliable in all states. In the case of AFDC data, some change in the procedure used to tabulate AFDC data will be required if all states are required to use a standard payment level in determining district level allocation. Depending on the payment level, as many as 12 states would have to collect AFDC data for the first time. As none of the states now collecting AFDC report that the annual tabulations require a prohibitive level of effort, these states can be expected to develop similar collection procedures without great effort on the part of the state or local education agencies. In almost all states, Foster data are considered unreliable, especially at the school district level. Foster data should, therefore, be excluded from the allocation formula if any of the three alternative allocation strategies is adopted.

CHAPTER 4. ADMINISTRATIVE FEASIBILITY OF ALTERNATIVE ALLOCATION STRATEGIES

This chapter completes the assessment of the four alternative strategies for allocation of Title I funds to school districts using the third criteria, administrative complexity. In the preceding chapters, data availability and reliability were shown to have little impact on the feasibility of any of the four alternatives.

This chapter demonstrates that the procedures required to collect and validate data are the same for the first three alternative allocation strategies:

1. single formula subcounty;
2. single formula substate; and
3. single formula direct allocation.

The level of effort required to collect and validate data is dependent of whether the law and regulations require a single Census source, with provision for estimation and validation of Census data for districts not in the 1973-74 Special Tabulations, or multiple sources, generally those now used for subcounty allocation. The major difference between the three allocation strategies is the level of government responsible for calculation of school district grants. Under the first two options, the states retain responsibility for calculation of school district grants. Under the third option, USOE assumes this burden. Each of the three alternative allocation strategies requires the cooperation of state education and welfare agencies.

The fourth option - multiple formula substate allocation - would actually decrease the administrative complexity of the calculation of district allocations. USOE would calculate the total Title I funds available to districts in each state. State level data could be used instead of county data, reducing the governmental units for which data are required from 3,300 to 51. The states would continue to calculate district grants. District grants could then be directly calculated by the states without allocation of county grants among the county components of school districts. This option, therefore, will not significantly shift responsibility between USOE and the states and would reduce the level of effort required of both levels of government to calculate district Title I grants.

The remainder of this chapter is divided into two sections. The first section provides an overview of the tasks required to implement each of the four alternative allocation strategies, and the second section assesses the administrative complexity of the four alternative allocation strategies.

Tasks Required to Implement the Four Alternative Allocation Strategies

Implementation of multiple formula substate allocation would require no new data collection or shift of responsibility from the states to USOE. USOE could use readily available state level poverty data to determine state allocations.[1] The states could then use data now used for subcounty allocation to determine district allocations. If any of the other three allocation strategies are adopted, new data collection and validation efforts are required. The efforts required to collect and validate Census, AFDC, N&D, and Foster child data are described below.

Census Data

Chapter 2 discussed two approaches to development of Census data required to implement any of the single formula allocation strategies. One approach would permit use of multiple sources of Census data; the second approach would mandate use of a single source of Census data such as the 1973-74 Special Tabulations. If multiple sources were allowed, data would have to be tabulated for school districts for which data were not now available. If a single source was mandated, Census data would have to be tabulated for all school districts with enrollment less than 300 and for those that had experienced boundary changes after the single source was developed. The reliability of all school district data, whether from multiple or single sources, not previously used in federal allocation must be validated through state and local review. This section describes how tabulation and validation procedures used in the 39 states now using Census data for subcounty allocation could be used to develop Census data required for implementation of any of the single formula strategies. The final paragraphs summarize the likely impact of the availability of 1980 Census data on the feasibility of the single formula allocation strategies.

Preparation of Census Data

The steps required to tabulate and validate Census data are the same regardless of whether a single or multiple sources of Census data are mandated. However, if multiple sources of

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[1] USOE could use either 1970 Census data or more current poverty data from the Survey of Income and Education (SIE) as the Census component of the state allocation formula.

Census data are allowed, the tabulation and validation processes are required only in the 11 states not now using Census data for subcounty allocation and any other states where changes in district boundaries make retabulation necessary. If a single source is mandated, data must be tabulated and validated in almost all states.

Tabulation of Census data for districts or county components for which data are not currently available can be developed through two procedures:

1. USOE or the states could cross-reference school district and Census enumeration area geography through the same procedures used to tabulate Census data for districts and county components for which data are available.

2. USOE or the states could use enrollment, other poverty data, or other best estimates of the between-district allocation of poor children to allocate Census poor children among districts, particularly among districts with enrollment less than 300.

The first option is likely to be the most time consuming and costly, with no increased likelihood of reliability over the second, less expensive option. Tabulating Census data for these districts will cost between $600,000 and $1,000,000 and will require at least 2 years for completion.[1] Moreover, for most districts, the probability of sampling, allocation and mapping error is quite high. The second process would require no more than a few days of clerical effort at the federal or state level. Though the data are equally unreliable, reliability is determined not by the tabulation process but by the review procedures described below.

After Census data are tabulated for districts or county components not contained in the sources selected for subcounty allocation, a one-time field review will be required to validate Census data. Annual review will be required to determine if boundary changes in any district or state warrant retabulation or validation.

The one-time field review includes four steps which can be carried out by USOE or the states. The four steps are:

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[1] These cost and time estimates are projections of the costs and time requirements to create the 1969-70 Special Tabulations.

1. distributing to the local education agencies via the states (a) school district counts of children in poverty, and (b) copies of the Census maps with school district boundaries overlaid that were used to make the 1970 or 1974 Census tabulations, according to which allocation strategy is in effect.

2. soliciting from the local education agencies identification of probable errors in mapping and counts of children in poverty.

3. for each probable error that involves a split enumeration district, distribute Census enumeration data to the state and local officials and request new percentages for allocating children in poverty among the district fragments.

4. revising the Census tabulations to reflect input from the field check.

After the one-time field check, a yearly update of the Census data would be required to ensure that Census data reflect current school district boundaries. Either USOE or the states would have to retabulate data for new districts. As noted previously, this will generally require only addition of counts of Census poor for consolidating districts. Under any of the allocation strategies, one of the two procedures could be used to ensure that Census data reflect current boundaries.

1. USOE could mandate an annual boundary survey where each state would be required to prepare maps of any changes that would then be used by USOE to retabulate Census data.

2. State education agencies would be required to retabulate data for school districts or county components undergoing boundary changes. USOE could furnish required maps, Census data files, and technical assistance to ensure uniform procedures are used.

In the case of very small districts, these two Census mapping approaches are costly, time consuming, and likely to have low reliability. As suggested earlier, allocation of Census poor based on local Census or poverty data or on state and local best estimates of the distribution of poor children is more likely to develop data that are accepted as accurate through state and local review.

The 1980 Census

This volume analyzes the feasibility of alternative allocation strategies for determining Title I funds to school districts using existing data. However, a brief discussion of plans and expectations for the 1980 Census is relevant at this point because: (1) the 1970 Census is now over 7 years olds; (2) the statutory Title I formula relies heavily on Census data; (3) availability of 1980 Census data is less than 4 years away; and (4) changes in Title I procedures require planning and time to implement.

The 1980 Census will ask total income of 100 percent of the U.S. population. This is a significant change from the 20 percent sample for income questions on the 1970 Census. Also, the Census Bureau plans to tabulate data for political precincts as well as the standard Census enumeration areas used in 1970.

These changes still will not make Census data available for all school districts, but they do have the following implications for school district data after 1980 and for the use of Census data in a Title I formula nationwide.

1. Problems of currency will be temporarily alleviated.

2. The problems of sampling error discussed in Chapter 2 will be eliminated.

3. Counts of children in poverty from the 1980 Census may be available sooner than they were after the 1970 Census since information asked for 100 percent of the population generally is released before sample data.

4. Tabulations of data for political precincts will create another source of 1980 Census data, in addition to Census enumeration areas, that could be coterminous with some school districts.

Problems of data coverage and reliability will remain for school districts that are not coterminous with 1980 Census areas. Experiences using the 1970 Census data for school districts indicate that problems could be avoided in using the 1980 Census data if careful steps are taken to check the accuracy of school district boundary maps (maps of 1979-80 boundaries are to be completed nationwide to coincide with the 1980 Census), to devise a method for distributing counts of poverty children among split Census areas that involves local education agency review and verification of counts by comparison with actual attendance data, and to expand coverage of the 1980 Census tabulation to all school districts.

Finally, proximity to the 1980 Census needs to be considered as a factor in deciding whether to undertake changes in the allocation procedures prior to 1980. Questions to be considered include: Should a major overhaul in allocation procedures that use a formula based on 1970 Census data be instigated when 1980 Census data will be available in less than 4 years?; Are there procedural changes that could both improve the present system and prepare for use of 1980 Census data?

AFDC Data

A first step in adopting AFDC data must be a federal requirement that state and local welfare offices cooperate with state and local education agencies in preparing the required school district counts of AFDC children. Some states not now using AFDC data reported that welfare department's refusal to supply district level data was a major factor in the decision to use other data for subcounty allocation. Once welfare offices are required to assist state education agencies, all states should be able to prepare school district or county component AFDC counts. In the 38 states now using AFDC for subcounty allocation, little change in processes now used for subcounty allocation will be required. At most, states not collecting AFDC at the payment level included in the single mandated formula would have to change the payment level used to identify and tabulate children counted for Title I fund allocation.

Single formula direct allocation by USOE will place a new reporting burden on the states and a new data collection burden on USOE. The current subcounty process requires reports and tabulation of data for only 3,300 counties. If school district data are collected, the states and USOE are required to report data for approximately 17,000 reporting units. The current system often results in delayed allocation due to reporting delays. A spokesperson at the National Center for Education Statistics responsible for tabulation of county grants suggests direct allocation by USOE would result in longer delays, unless the states are required to adhere to strict time deadlines.

Neglected and Delinquent and Foster Data

Data on neglected and delinquent children are now collected and reported by school districts. No change in data collection procedures are required if any of the single formula allocation strategies are adopted. School district and county component counts of Foster children could not be easily included as a component of a single formula allocation strategy. The analysis

presented in Chapter 3 demonstrated that Foster data are used by only 33 states in present subcounty formulas, while other states actually substitute Census estimates for actual counts of Foster children. Further, reliability is almost universally suspect at the school district level because Foster children frequently move too often to enable accurate counts to be obtained.

Two ways of handling the Foster data are suggested below:

1. allocate them on the basis of Census children, or

2. delete them from the allocation formulas.

The former option creates problems of its own by using static Census data that itself may be subject to errors of reliability. The second option may be most expedient since Foster children presently comprise only 2 percent of all Title I eligible children.

An Assessment of the Administrative Complexity of the Four Alternative Allocation Strategies

This paper uses two measures of administrative complexity:

1. the degree to which adoption of an alternative allocation strategy will shift data collection and grant allocation tasks between levels of government; and

2. the level of effort required of USOE and the states to implement the new procedures.

In the introduction to this chapter, multiple formula substate allocation was judged to be less complex than existing substate allocation because it did not shift tasks from the states to USOE and the level of effort required of the state and USOE would actually be reduced.

Single formula subcounty allocation would not be more complex than the existing subcounty allocation if the first measure of administrative complexity is used. It would, however, require greater effort from states not now using a formula similar to the single national formula. As this strategy requires county component data, greater effort is required than the other allocation strategies requiring only school district level data. The highest level of new effort on the part of the states would be the result of mandating a single source for Census data. Almost all states would have to tabulate Census data for all districts not contained in the single source and to validate the data for

all districts through local review of the between-district distribution of poor children. If multiple sources are allowed, only the 11 states not currently using Census data or those that have experienced boundary changes would have to tabulate and validate Census data for some or all school districts.

In addition to Census data preparation, this allocation strategy could require as many as 12 states to undertake AFDC data collection for the first time, and require other states to modify the payment levels for which AFDC data are collected. The number of states required to adopt new or modify old AFDC collection procedures would depend on the AFDC payment level included in the new formula.

The single formula substate allocation strategy also requires no shift in the tasks between the states and USOE. It would, however, require states not now using Census and AFDC data to collect and validate data required for the formula components. The data collection processes are the same as those for the single formula subcounty allocation strategy described above. The major difference between the level of effort required to implement these strategies is the level of effort required to tabulate Census data. The 1973-74 Special Tabulations provide a Census source likely to reflect current boundaries if a multiple or single source of Census data is mandated. Single formula subcounty allocation, which requires county component data, might prove difficult, particularly if all states were required to update and validate the 1969-70 Special Tabulations.

Single formula direct allocation is the most complex option. The level of effort required to collect the data necessary to implement the single formula strategy is the same as that described for the other single formula allocation strategies. Clearly, the use of multiple Census sources would reduce the level of effort required to implement the single formula strategy. However, use of multiple sources is less likely if single formula direct allocation is adopted. As noted previously, the data used by most states is subject to unknown degrees of sampling, allocation, or mapping error. State education agencies can use this data because they were developed in consultation with local agencies and reliability and acceptance of the data were established through local review. Once the data are submitted to USOE, local districts, which have accepted the data as accurate when used by the states, may not consider the data accurate when used by USOE. At best, some revalidation will be required. USOE is, therefore, most likely to adopt a single source of Census data such as the 1973-74 Special Tabulations. Use of these data would require estimation of Census data for districts not included in the

Special Tabulations and a field review of all Census data to be used for fund allocation. State education agency staff could play a major role in estimating and validating data and subsequent updating. However, USOE would undertake a major data development effort to create and maintain Census data for all school districts.

Collection of AFDC data would also require an additional level of effort. States would not only be required to collect AFDC data; they would have to report the data to USOE. If the other single allocation strategies were adopted, delays in collecting AFDC data would only affect a single state. If direct allocation were adopted, delays in collection of AFDC data for a few districts could delay Title I allocations for the nation. Timely collection of AFDC data for 17,000 school districts would require firm legislative deadlines for data submission, and clear penalties for states submitting late AFDC counts.[1]

USOE's direct allocations cannot be the final allocations for three reasons:

1. Some school districts will not participate in Title I and their funds will need to be redistributed to other districts.

2. Similarly, some school districts' applications will not meet program regulations and part or all of their funds will need to be redistributed to other school districts.

3. Some school districts serve significant numbers of children who live in other districts and the state education agencies are authorized to redistribute funds to account for these shifts.

One or more of these events could occur in every state and mechanisms will have to be established either to allow states to change the allocations or to report to USOE what changes are to be made. In either case, the state education agencies will still need to have discretionary authority over fund allocations because the data needed to make final determinations are available only at the state level.

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[1] USOE has pointed out that in this period, when AFDC counts are declining in many areas, use of last year's data if deadlines are not met is not a penalty in many states.

Summary

This chapter has shown that there are differences in the administrative complexity of the tasks required to implement any of the four allocation strategies. The least complex is the multiple formula substate allocation. No new data collection tasks are required; no tasks are shifted from the states to USOE. The most complex is single formula direct allocation. This option is most likely to require a nationwide effort to tabulate and validate Census data derived from a single source. Many states will be required to adopt or modify AFDC data collection procedures and to report the data to USOE. The major difference between direct allocation and the other single formula allocation strategies is the magnitude of the shift in tasks between USOE and the states. USOE would take at least supervisory authority for data collection and validation procedures now carried out by the states.

APPENDIX A. A REVIEW OF COMMONLY PERCEIVED ERRORS IN THE 1969-70 SPECIAL TABULATIONS DISTRIBUTED BY USOE

The 1969-70 Special Tabulations were developed by USOE and distributed as computer listings to the states in 1973. These data were commonly perceived to be of poor quality, in part because of actual errors in the tabulations corrected when the 1973-74 Special Tabulations were made and in part due to misunderstanding of standard Census sources and/or printing errors in the computer listings distributed by USOE. The three commonly cited errors and their resolution are discussed in the following paragraphs.

I. Counties Were Omitted from the Listing of 1970 Special Tabulations for School Districts Sent to the States

A programming error at USOE resulted in the systematic omission of the county summary data line of the last county of every state. No school district data were omitted from the listing, however. A state education agency could easily reconstruct the missing data on the listing, and the necessary data are also contained on the computer tapes at USOE.

II. Differences between the 1970 Special Tabulations and Published Census Data

In school districts which are coterminous with counties, cities or towns, the number of children aged 5-17 in poverty could be expected to be the same in the 1970 Special Tabulation as in previously published Census data for those areas. However, the data do not match in most areas.

There are two reasons for the differences, neither of which has been adequately communicated to states using the 1970 Special Tabulations or alternate sources of Census data. The first and major reason is that the Census Bureau made an error in tabulating poverty data. The error,[1] which affected the recorded income of nearly 40,000 households,[1] was corrected prior to the

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[1] The error occurred when the Census Bureau miscoded household income as "over $50,000" when it actually was any income from zero to $50,000.

preparation of the 1970 Special Tabulations but after the publication of the Fourth Count Census data to which many Census data users had access.

The second reason resulted from a technical difference in the method of defining whether a family's income was below poverty. A small number of families that had incomes very near the poverty line (within 0.1 percent) were classified as being poor in one tabulation and not poor in the others.

III. Coding Errors in the Original Mapping Process

In a few cases, the original mapping of school districts, which preceded development of the 1970 Special Tabulations, involved errors or omissions. For example, the City of Rensselaer in New York was left out of the mapping and its children were allocated to the Lansingburg School District.

Similar errors were found in several other states. These errors were usually easily identified and the states were able to correct them by notifying the Bureau of the Census. The Bureau reviewed each claimed error and, where a mistake had been made, supplied corrected figures. No tabulation of the number of such errors has been made by the Bureau; however, spokespersons indicated the level of error was "very small."

APPENDIX B. ALLOCATION ERROR DUE TO TABULATION OF CENSUS DATA FOR DISTRICTS CONTAINING SPLIT CENSUS ENUMERATION AREAS

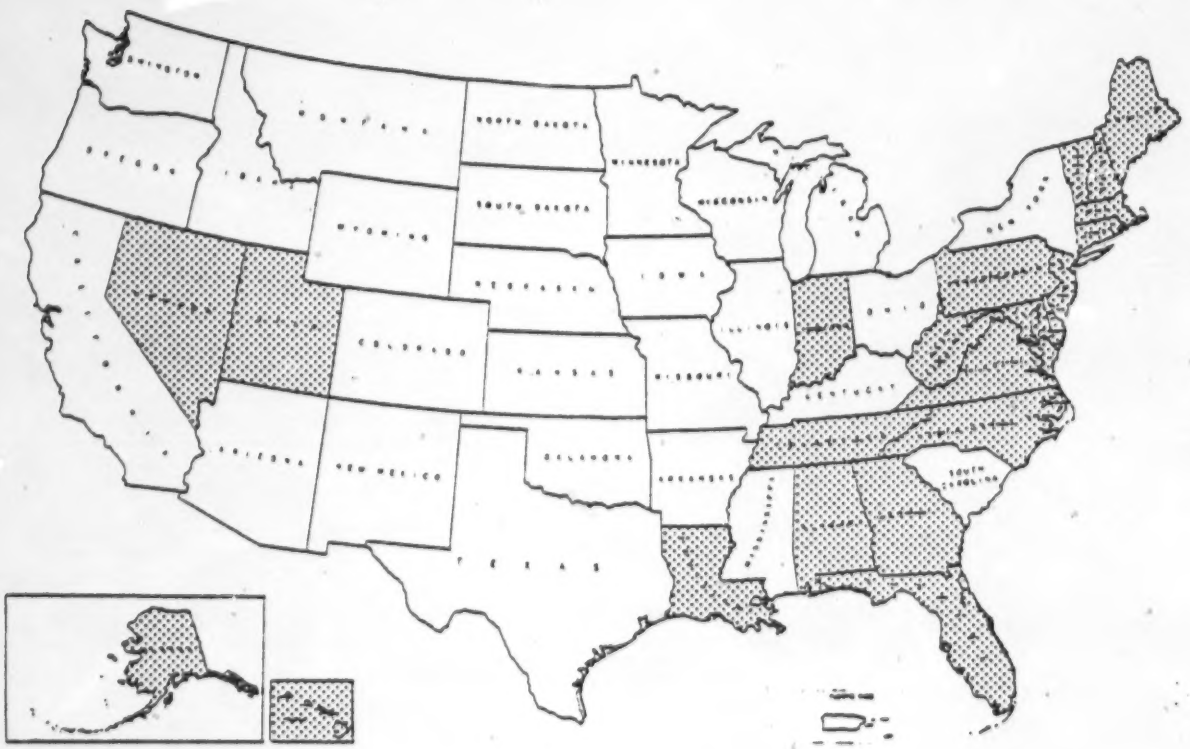
A major criticism of school district or county component Census data retabulated from published Census sources is that the retabulation process may result in allocation error. Table B.1 presents an analysis of the percentage of districts and population in each state that could be affected by allocation error if the 1973-74 Special Tabulation is used as the source for school district level Census data. Nearly half of the nation's districts and over 80 percent of the population live in areas where less than 20 percent of the population live in split Census enumeration units. The 22 states where 80 percent or more of the districts have fewer than 20 percent of the population in split Census enumeration districts is displayed in Figure B.1.

Because only a small percentage of the population is at risk, i.e., subject to allocation error, the impact of allocation error when it occurs is probably small. In the remaining districts and for the remaining population, the probability of allocation error increases as the population at risk increases. As these districts tend to be smaller areas made up of fewer Census enumeration districts, the impact of allocation error is probably greater.

Time and resources did not allow a similar analysis of the distribution of districts and population likely to be subject to allocation error due to split enumeration districts in the 1969-70 Special Tabulations. The magnitude of the problem in each state is probably similar to that in the 1973-74 Special Tabulations. Data retabulated from other Census sources by states is probably more subject to allocation error, as larger Census enumeration areas, e.g., counties, were often allocated using geography area, enrollment, or Free Lunch data. The reliability of the state data, however, has been validated through state and local review. See Chapter 2 for a fuller discussion.

Figure B.1

States Where 80 Percent or More of the Districts Have Fewer Than 20 Percent of the Population in Split Enumeration Districts



States where 80 percent or more of the districts have fewer than 20 percent of the population in split enumeration districts

Table B.1

School Districts and Population, by Percentage of Population by Percentage of Population in Split Census Enumeration Districts, by State

State	School Districts			Population	
	Number Eligible for Title I and on 1974 Census Tabulations	Percent with Less Than 10% of Their Population in Split Enumeration Districts	Percent with Less Than 20% of Their Population in Split Enumeration Districts	Percent in Districts With Less Than 10% of Their Population in Split Enumeration Districts	Percent in Districts With Less Than 20% of Their Population in Split Enumeration Districts
Alabama	118	95.8%	99.2%	96.6%	98.7%
Alaska	28	100.0	100.0	100.0	100.0
Arizona	112	33.1	51.0	69.2	88.6
Arkansas	292	8.6	22.6	33.4	55.4
California	610	23.3	44.1	52.0	81.9
Colorado	114	29.0	45.7	74.4	89.4
Connecticut	145	99.3	99.3	99.7	99.7
Delaware	22	22.7	50.0	43.3	64.8
Florida	67	100.0	100.0	100.0	100.0
Georgia	187	97.9	99.0	98.9	99.3
Hawaii	1	100.0	100.0	100.0	100.0
Idaho	85	24.7	44.7	46.0	75.1
Illinois	894	12.6	26.4	57.0	70.7
Indiana	300	92.3	96.6	92.2	97.3
Iowa	429	5.3	17.5	31.6	57.3
Kansas	306	15.4	35.7	54.0	74.8
Kentucky	186	63.5	77.5	72.6	85.4
Louisiana	66	100.0	100.0	100.0	100.0
Maine	134	100.0	100.0	100.0	100.0
Maryland	24	100.0	100.0	100.0	100.0
Massachusetts	257	100.0	100.0	100.0	100.0
Michigan	510	22.3	36.4	52.0	70.1
Minnesota	406	9.4	22.5	40.9	64.4
Mississippi	149	49.7	68.5	65.0	82.1
Missouri	403	8.7	18.9	41.1	59.0
Montana	81	14.8	38.3	57.4	76.2
Nebraska	229	17.9	31.0	61.7	74.7
Nevada	17	100.0	100.0	100.0	100.0
New Hampshire	88	98.8	99.9	95.9	100.0
New Jersey	446	100.0	100.0	100.0	100.0
New Mexico	68	35.3	55.9	76.9	87.2
New York	691	13.6	24.2	61.7	71.9
North Carolina	151	70.9	85.5	78.7	90.0
North Dakota	119	6.7	14.3	36.7	56.4
Ohio	611	29.8	46.3	58.4	73.1
Oklahoma	337	7.1	17.2	32.6	59.1
Oregon	157	8.3	20.4	36.2	54.7
Pennsylvania	502	97.7	99.5	99.1	99.8
Rhode Island	37	100.0	100.0	100.0	100.0
South Carolina	93	45.2	59.2	72.8	86.4
South Dakota	185	13.0	28.1	46.3	62.1
Tennessee	142	91.5	93.6	98.2	98.7
Texas	755	14.6	33.3	59.0	77.0
Utah	40	90.0	92.5	99.4	99.5
Vermont	89	96.6	96.6	98.6	98.6
Virginia	129	100.0	100.0	100.0	100.0
Washington	217	14.2	25.6	46.5	66.9
West Virginia	55	100.0	100.0	100.0	100.0
Wisconsin	394	18.5	29.2	40.0	67.3
Wyoming	11	45.5	63.7	83.0	86.8
U.S. Total	11,499	38.5%	49.8%	72.0%	83.1%

Source: USOE School District Reference file for Fiscal Year 1974.

APPENDIX C. CHANGES IN SCHOOL DISTRICT BOUNDARIES

Changing school district boundaries are becoming less frequent. Those changes that do take place are not likely to affect the availability or reliability of school district level Census data because most boundary changes are the result of district consolidations. Data for the district components of consolidated districts can be summed to form data for the new consolidated district. These statements are based upon an analysis of the change in district boundaries between the mapping project used to prepare the 1969-70 Special Tabulations and that used to prepare the 1973-74 Special Tabulations.

The final report of the contractor responsible for the 1973-74 mapping project documented the following changes:[1]

1. Approximately 960 districts underwent boundary changes (about 8 percent of all districts on the 1970 Special Tabulations).

2. Approximately 52 percent of the above changes required remapping, for one of several reasons: (a) consolidation with school districts not included in the original 1970 Special Tabulations project; (b) annexation of territory of another school district (the study does not indicate whether these are actual geography changes or, alternatively, corrections to errors made in the earlier mapping process); and (c) division of existing school districts.

3. Approximately 48 percent of the above changes did not require remapping, generally for the following reasons: (a) involved consolidation of districts for which data were already tabulated; or (b) involved less than 5 percent of the school district's population.

4. Close to another 200 districts are reported by the report's preparers to have been mapped erroneously during the original mapping process.

The boundary changes that required remapping (excluding those that were mapped erroneously for 1969-70) comprise only a small proportion of the districts in the 1970 Special

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[1] Technical Report: National Survey of Public School System Boundary Changes, Parts I and II, March 1975. Prepared for Canyon Research Group for the National Center for Education Statistics.

Tabulation. Therefore, the Census data for 95 percent of the school districts contained on the 1973-74 Special Tabulations could be used for single formula Title I allocations with only occasional need to sum data for newly consolidated districts. This report, however, did not cover districts with enrollments of less than 300 - a group of districts that account for much of the change in school district boundaries. Chapter 4 provides a discussion of procedures for developing data for these small districts.